

ABSTRACT

By applying a force to cancel a reaction acting on a stator (60) due to driving of a mover (51) to the stator by an electromagnetic interaction generated between 5 reaction canceling magnetic pole units (45X1, 45X2, 45Y1, 45Y2) and armature coils (63)'s, and by having a magnetic pole unit, which constitutes the mover, composed by combining magnets having such magnetization-directions that their magnetic flux are toward the stator and 10 magnets having magnetization-directions crossing the aforementioned magnetization-directions without using yoke material for the mover to be light weight, the vibration of the stator can be prevented even upon the high speed drive of the mover. Therefore, a highly 15 precise positioning control can be performed while moving a placed sample (W) at high speed.